



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Response
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Dated

In re Patent Application of)
Ichiro TAKAYAMA et al.)
Serial No. 09/394,345)
Filed: September 13, 1999)
For: ACTIVE MATRIX TYPE FLAT-)
PANEL DISPLAY DEVICE)

Art Unit: 2673
Examiner: R. Osorio

CERTIFICATE OF MAILING

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Washington, D.C. 20231, on 1/3/03

RESPONSE

Honorable Commissioner of Patents
Washington, D.C. 20231

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Sir:

The Official Action mailed September 4, 2002 has been received and its contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to January 4, 2003. Accordingly, Applicant respectfully submits that this response is being timely filed.

Applicants note with appreciation the consideration of the Information Disclosure Statements filed on August 11, 2000 and June 6, 2002.

Claims 11-44 were pending in the present application. Claims 33-44 have been withdrawn from consideration as being directed to a non-elected invention, leaving claims 11-32 subject to examination in the present application. Claims 11, 14, 17, 21, and 24 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance.

The Official Action rejects claims 11-32 as obvious based on the combination of U.S. Patent 4,042,854 to Lou et al., U.S. Patent 5,670,792 to Utsugi et al., and U.S. Patent 3,885,196 to Fischer. This rejection is maintained from the Official Action mailed September 6, 2001 (paper 21). As stated in MPEP § 2143-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine

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reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Applicant respectfully submits that the Official Action has failed to establish a *prima facie* case of obviousness in that the prior art of record, whether taken alone or in combination, fails to teach each and every limitation of the present invention. Furthermore, it is respectfully submitted that the Official Action fails to provide a sufficient showing that one of skill in the art would have been motivated to combine the references to achieve the present invention. Reconsideration is requested.

Specifically, as previously asserted, Fischer fails to disclose or suggest a driving circuit including third thin film transistors formed over the claimed substrate. The Official Action asserts that elements Q10-Q18 and/or Q20-Q26 correspond to the claimed third thin film transistors and asserts that such transistors are formed over the same substrate as the first TFTs, citing Figures 1 and 2; column 1, lines 18-32; and column 3, lines 31-55. Applicant respectfully asserts that Fischer is at best silent about the relationship between the elements Q10-Q18 and Q20-Q26, and the substrate. Specifically, column 1, lines 18-32 recite:

The present invention alleviates the size restriction of electroluminescent display panels by disclosing a single crystalline substrate that has metallic oxide semiconductors, or thin film transistors, positioned on one side and light emitting diodes positioned on the opposite side and in direct registry with metallic semiconductors (MOS) or the thin film transistor (TFT) circuitry. . . . This invention is a direct current electroluminescent display panel on which a solid layer of electroluminescent material for individual light emitting diodes (LEDs) are addressed by MOSs or TFTs.

Also, column 3, lines 31-55 recite:

The voltage pulses from generators 20 and 21 are (handed off) in bucket brigade fashion by column and row bucket brigade shift registers. The column bucket brigade shift registers is comprised of horizontal clocks A and B, represented by numerals 6 and 8 and generator 20, along with a bank of column shift register MOSs Q10, Q12, Q14, Q16, and Q18. The row bucket brigade shift register is comprised of vertical clock 22 and generator 21, along with a bank of row shift register MOSs Q28, Q30, Q32, Q34, Q36, Q38, and Q40. Horizontal clocks 6 and 8 produce square waves 6a and 8a, respectively, which are 180° out of phase with each other. Waves 6a and 8a (hand off) in a bucket brigade manner the horizontal synchronizing pulses from circuit 20 along column shift register MOSs Q10, Q12, Q14, Q16, Q18, and others (not shown) to form the total horizontal portion of a display. The horizontal synchronizing pulses from generator 20 are passed through the column shift register MOSs and are applied to the gate electrode of video MOSs Q20, Q22, Q24, Q26, and others (not shown) totaling the number of columns in the matrix of display elements. Terminal 28 is connected to the source terminals of the video MOSs. Video signals that are applied to terminal 28 are therefore also applied to all the source terminals of the video MOSs.

It is respectfully submitted that nowhere in this portion of Fischer is there any discussion of the relationship between the elements Q10-Q18 and Q20-Q26, and the substrate. In this regard, while the Official Action asserts that one would be motivated to combine the teachings of Fischer with Lou and Utsugi to alleviate the size restriction of EL panels as discussed in column 1, lines 18-25, the subsequent portion of column 1 makes clear that the invention in Fischer has nothing to do with elements Q10-Q18 and Q20-Q26, but rather with the registration between the MOSs and LEDs. Column 1, lines 32-47 continues:

Using the MOSs and LEDs in the preferred embodiment, these MOSs and LEDs are in exact registration with each other and on opposite sides of the panel. The panel is prepared by depositing silicon on a substrate made of some insulator material, such as a spinel or sapphire single crystal wafer. Holes are drilled through the substrate by electron or laser beams or by using photoetching techniques. One hole is provided for each related MOS and LED. Conductive material is deposited in the holes to connect the electrical outputs from the MOSs to the inputs of the LEDs. The MOSs are scanned by horizontal and vertical bucket brigade shift registers. Either layer of electroluminescent Group II-VI materials or the LEDs

are deposited on the front side of the substrate after the addressing MOSs are deposited on the back side of the substrate.

Therefore, the asserted motivation to include the elements Q10-Q18 and Q20-Q26 of Fischer in the combined device of Lou and Utsugi (namely to alleviate the size restriction of EL panels as discussed in column 1, lines 18-25) is improper since one of skill in the art would not look to elements Q10-Q18 and Q20-Q26 to achieve this advantage, but rather would look to forming the MOS and LED elements in directed registration as disclosed in Fischer.

It is respectfully submitted that there has been an insufficient showing that one of skill in the art would have been motivated to combine the teachings of Fischer, Lou and Utsugi to achieve the present invention and that a *prima facie* case of obviousness cannot be maintained. Furthermore, even should such motivation be present, the combined teachings of Fischer, Lou and Utsugi fail to disclose or suggest that the elements Q10-Q18 and/or Q20-Q26, asserted to correspond to the claimed third thin film transistors, are formed over the same substrate as the first TFTs and a *prima facie* case of obviousness cannot be maintained for this further reason. Favorable reconsideration is requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,



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